

Chapter 2: File backup and restore

You can use the Meridian IVR Backup Tool to back up and restore application-related and IVR related files by issuing UNIX commands from a shell.

This tool is not designed to backup UNIX system files. If you need to do this, use the SCO backup utility.

This chapter describes the Backup Tool and the windows associated with each of the two processes (backup and restore) available from the Backup Tool window. The backup process includes how to

- specify, modify, add, and remove backup list files
- perform immediate backups
- schedule and unschedule backups
- view the list of scheduled backups

The restore process includes how to

- view the contents of previous backups
- restore all files or only selected files

The final section describes various errors which are reported by the tar system, including

- immediate backup errors
- schedule/unschedule backup errors
- restore/view errors
- restore/restore errors

A default backup list exists which includes all the required application and environment files and directories. You should always consider backing up the user function executables (residing in the `/u/ivr/exe` directory) which are not included in the backup default list.

Depending on the type of account being used, the Backup Tool displays different information. For example, a scheduled backup can be unscheduled only by the account that created it.

Backup Tool

Procedure 2-1

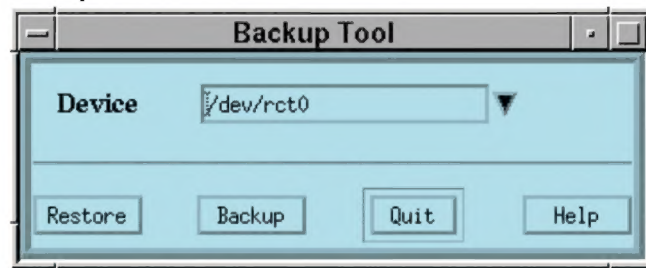
Accessing the Backup Tool

- 1 To access the Backup Tool, press the left mouse button on the desktop background, and select Backup Tool from the pull-down menu.

The Backup Tool window appears, as shown in Figure 2-1.

Figure 2-1

Backup Tool window



The default device is `/dev/rct0`. Once the backup device has been specified, various backup functions can be performed. These functions are displayed at the bottom of the Backup Tool window.

Procedure 2-2

Changing the backup device

- 1 Click on the text entry box, and type another device name in the Device field.

This is now the selected backup device.

- 2 To continue the backup process, click on Backup. To exit from this window, click on Quit.

The following function buttons are available from the Backup Tool window:

Restore

Restores files from a previous backup tape.

Backup

Schedules or unschedules backups, displays the list of scheduled backup times, or does an immediate backup. It also enables files to be added or deleted from backup lists.

Quit

Quits or exits the Backup Tool.

Help

Displays general help about the Backup Tool.

The Backup Tool includes an embedded window which displays errors related to immediate backups or restores. The errors written to this window are also written to the /tmp/backup.log file. Any errors generated by scheduled backups are only written to the /tmp/backup.log file. Only I/O errors are reported. Refer to “GUI-based Backup Tool error reporting” on page 2-15 for details and sample errors. All errors appear in the System Console window.

Backup function

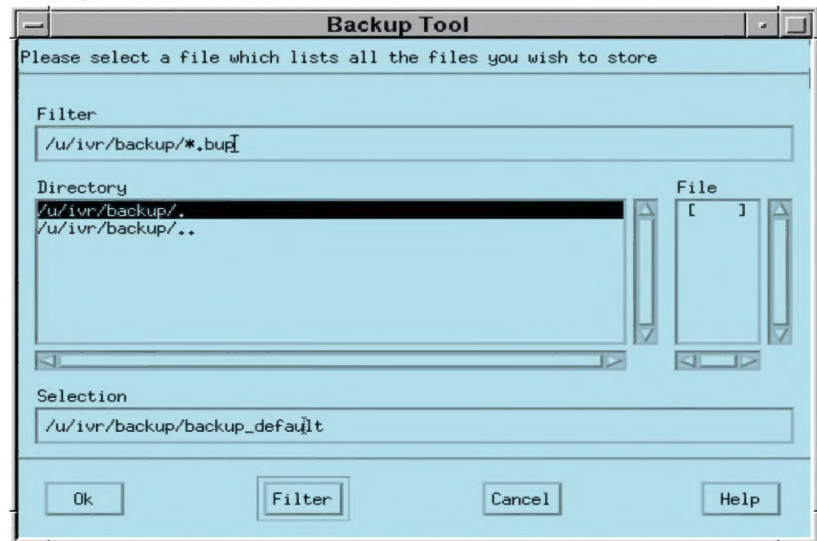
A backup list file contains a list of all of the files and/or directories which are to be written onto tape during the next immediate or scheduled backup. The default backup list file is /u/ivr/backup/backup_default.bup.

On a newly installed system, the Backup Tool creates this default file the first time the tool is run. To return this file back to its standard default contents, remove or rename the backup file (this must be done through a UNIX shell using the rm or mv commands) and restart the Backup Tool.

Procedure 2-3**Specifying a backup list file**

- 1 From the Backup Tool main window, click on the Backup button.
The window as shown in Figure 2-2 appears.
- 2 Select either the existing backup file or explicitly name a new backup file. This specified file will contain the list of all files to be backed up.

Figure 2-2
Backup device selection window



The following function buttons are available in the backup list file window:

Ok

With a valid file name in the selection box, clicking this button displays a window with options to modify or delete the file or to schedule an immediate backup on the file.

Filter

Displays the list of files in the selected directory which match the criteria specified in the Filter box.

Cancel

Displays the main Backup Tool window.

Help

Displays help text on the options available from this window.

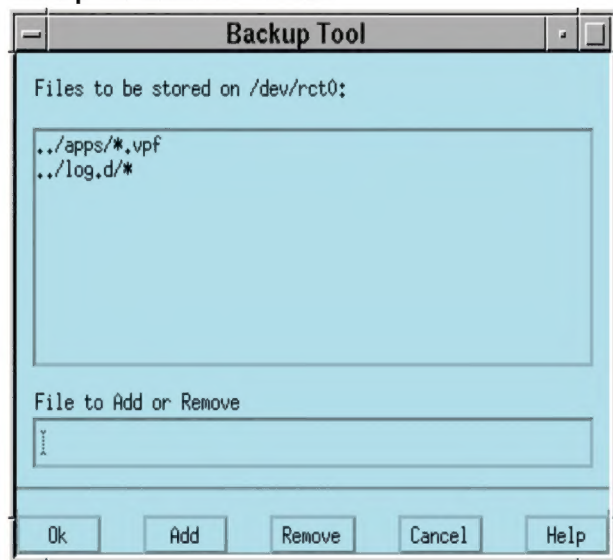
Procedure 2-4

Modifying the Selected Backup List file

- 1 From the Backup list file window, click on OK.

The window in Figure 2-3 appears.

Figure 2-3
Backup file selection window



- 2 Edit the backup list file by selecting files that should be included in a backup.

The following is a list of optional Meridian IVR related directories you can add to your backup list files. The default contents are the `/u/ivr/apps` and `/u/ivr/log.d` directories. The other directories and files in you can add depend on the features installed in your system.

```
../apps/*.vpf
../log.d/*
/.*?
/u/ivr/backup/backup_default.bup
/u/ivr/exe/*.sai
/u/ivr/data
/u/ivr/3270
/u/ivr/usr/*.ch
/u/ivr/sys_files/sysgen.d
/u/ivr/sys_files/*.dbm
/u/ivr/sys_files/*.tpl
/u/ivr/sys_files/*.ext
/u/ivr/vrs/exe/lh.config
/u/ivr/vt100
```

The following function buttons are available from the Backup file selection window:

OK

Displays a window with backup scheduling options.

Add

Adds to the list the file specified in the File to Add or Remove box.

Remove

Removes from the list the file specified in the File to Add or Remove box .

Cancel

Displays the Backup Tool main menu.

Help

Displays help text on the options available from this window.



CAUTION!
Risk of data loss

File names are not checked or validated. If you are not careful, you can overwrite existing files.

Procedure 2-5

Adding a file to the backup list

- 1 From the Backup file selection window, click on the File to Add or Remove text entry box.
- 2 Type a valid file name.
- 3 Click on Add.

If the file does not exist, a message box appears. Otherwise the file appears at the bottom of the backup list.

ATTENTION!

All files can be added to the backup list. This is not recommended. The files which should not be backed up and which generate the warning are those in the following directories: /usr, /bin, /dev, /etc, /lib, /tmp, and most of the files under the / directory (for example, sysv68, and so on).

Only the source “.c” files and “.h” files for user functions from the usr directory are included in the default backup list of files. To include user functions which have been compiled and promoted to the exe directory, these names must be explicitly added to the backup list. Any user function “make” files found in the usr directory must also be added to the backup list if they are to be included in the file backup.

Procedure 2-6 Removing a file from the backup list

- 1 In the Backup file selection window, highlight the directory/file you want to remove or type the name into the text entry box.

The file appears in the File to Add or Remove text entry box.

- 2 Click on Remove.

The file is removed from the list.

If the file does not exist, a warning message appears.

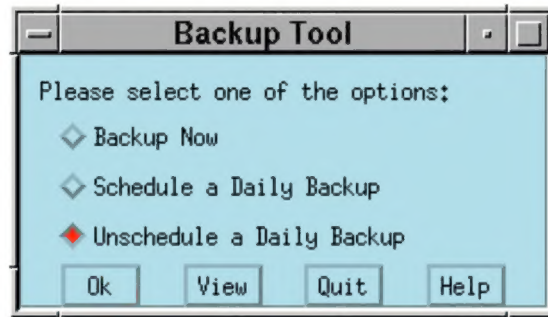
Note: If you select any files in the default file list, a warning message is generated and you cannot remove the file.

Procedure 2-7 Selecting a backup time

- 1 After selecting a file from the Backup file selection window, click on OK.

The Backup time window (see Figure 2-4) appears:

Figure 2-4
Backup time window



The following function buttons are available from the Backup time window:

OK

Displays a window corresponding to the option selected by the radio buttons.

View

Displays a window containing the list of currently scheduled backup times, the backup list file to be used for each scheduled backup time, and the name of the account that scheduled the backup (see Figure 2-5). This list is compiled using the files identified in this section and is sorted by time of day. If no scheduled times exist, the window is empty. Three separate crontab files contain the scheduled backup. You can run the Backup Tool from any of the following accounts:

- /usr/spool/cron/crontabs/admin
- /usr/spool/cron/crontabs/vad
- /usr/spool/cron/crontabs/root

Quit

Displays the main Backup Tool window.

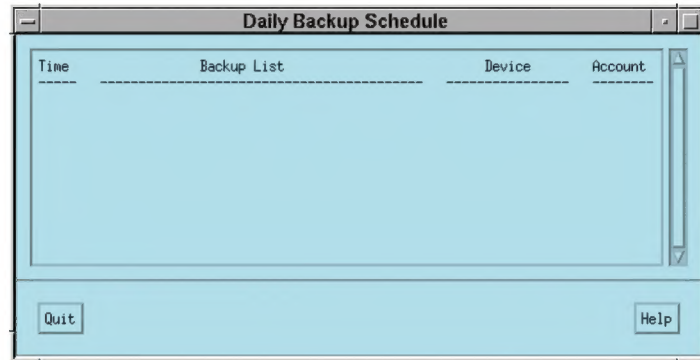
Help

Displays help text on the options available from this window.

Procedure 2-8**Viewing the list of scheduled backups**

- 1 From the Backup time window, click on View with the left mouse button.

The window shown in Figure 2-5 appears:

Figure 2-5**Backup schedule list window**

The following functions are available from the Backup schedule list window:

Quit

Returns you to the previous backup window.

Help

Displays help text on the options available from this window.

Procedure 2-9**Performing an immediate backup**

- 1 From the Backup time window, click on the Backup Now button, then click on OK with the left mouse button.

A message window appears requesting you to insert the correct media (tape) into the backup device.

- 2 At this point, you can cancel the backup. To continue, insert the correct media into the backup device specified and click on OK with the left mouse button.

A message flashes that files are being backed up.

If the light on the tape drive blinks, this indicates that the tape has not been inserted correctly.

- 3 Make sure the tape is inserted correctly into the drive and that it is not write protected.
- 4 When the backup is complete, click on Cancel in the Backup window to return to the Backup Tool window.

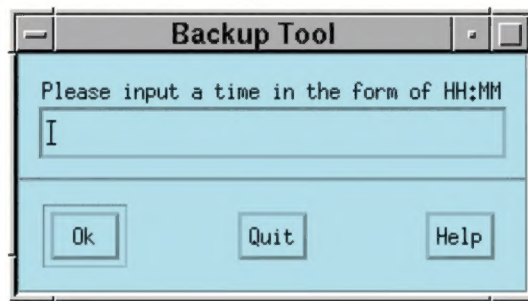
When the backup is complete, the Backup Tool automatically extracts the directory of files from the tape to verify that the backup was successful. If this operation is not successful, the backup is assumed to have failed, and relevant error messages are generated in the log file and in a message window.

Procedure 2-10 **Scheduling backups**

- 1 Click on the Schedule Daily Backup button, then click on OK with the left mouse button.

The Schedule daily backup window (see Figure 2-6) appears:

Figure 2-6
Schedule daily backup window



The last entered backup time scheduled from this account appears.

- 2 Enter a new time using the 24-hour clock in the format HH:MM (Hours:Minutes).
- 3 Click on OK.

If the time entered is valid, and the specified backup file exists, a message appears confirming that a backup of the contents of the specified file has been scheduled. If the time entered is invalid or if the specified backup file has been deleted, an error message appears.

Other function buttons in the Schedule daily backup window include:

Quit

Ignores any time entered and returns you to the previous backup window

Help

Displays help text on the options available from this window

Procedure 2-11**Unscheduled backups**

- 1 From the Backup time window, click on the Unschedule Daily Backup button, then click on OK with the left mouse button.

The window appears as shown in Figure 2-6.

- 2 Enter the time using the 24-hour clock in the format HH:MM (Hours:Minutes).
- 3 Click on OK.

A dialog box appears indicating that the scheduled backup time has been unscheduled.

Note: If you enter an unscheduled backup time that does not match a scheduled backup time, an error message appears. You need to check the list of scheduled backups to see if the unscheduled backup time you entered matches a scheduled backup time on the list.

Procedure 2-12**Checking the list of scheduled backup times**

- 1 Click on the OK button on the error box to return to the Restore file list window (see Figure 2-7).
- 2 Click on View with the left mouse button to see the list of scheduled backup times.

You will see a list of the scheduled backup times.

- 3 Make sure the value you enter as an unscheduled backup time matches one of the scheduled backup time values on the list.

General scheduling information for backups

- When you are performing a backup (immediate or scheduled), a pop-up window appears if the backup fails. In addition, errors are logged in the backup log file /tmp/backup.log.
- Only daily backup scheduling is permitted. A scheduled backup will be performed daily. To stop this scheduled daily backup, it must be unscheduled.
- There is no maximum number of scheduled backup times.
- An account can schedule only one backup for any particular time.
- If a backup is scheduled at a time for which a backup is already scheduled by another account, no warning is issued.
- If two scheduled backups overlap each other (that is, a backup is scheduled to run before a previous backup has finished), the second backup will fail. No warning is issued at scheduling time.
- When the backup of the backup list is completed, the Backup Tool automatically extracts the directory of files from the tape. This directory is not displayed. If this operation is successful, then it is assumed that the backup of files was successful. If not, the backup is assumed to have failed, and relevant error messages are generated in the log file.



CAUTION! **Risk of data loss**

The cron file is used to schedule backups. Executing a “crontab-r” from a UNIX shell in the vad account removes any of the vad account’s scheduled backups.

Restore function

The Restore button of the Backup Tool allows you to restore all the files, only the default files, or selected files from a backup. You can check the contents of a backup to restore selected files.

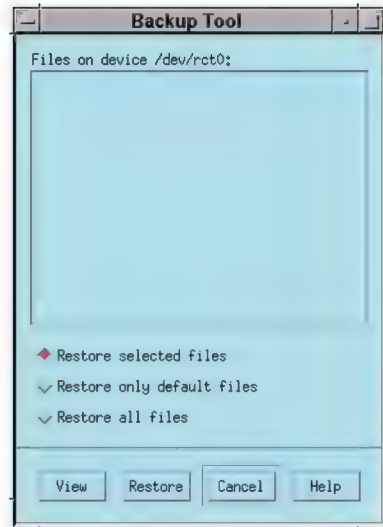
Procedure 2-13**Viewing the contents of previous backups**

- 1 From the Backup Tool main window, click on View with the left mouse button.

A message box appears and tells you to insert the correct media.

- 2 Insert the correct media into the specified device, and click on OK with the left mouse button.

A message appears indicating that the device is being read. The list of files (if any) to be restored appears in the following window (see Figure 2-7):

Figure 2-7**Restore file list window**

The following function buttons are available from the Restore file list window:

View

Displays a window containing the contents of a backup tape.

Restore

Restores either all files or only selected files from a backup tape depending on the radio button selection.

Quit

Returns you to the Backup Tool window.

Help

Displays help text on the options available from this window.

Procedure 2-14

Restoring all files

- 1 Click on Restore All Files with the left mouse button.
- 2 Click on Restore with the left mouse button.
A pop-up window appears asking you to insert the correct tape into the drive specified.
- 3 Click on OK to restore the files or Cancel to return to the Backup Tool window.
If you click on OK, a message appears indicating that the system is restoring files.
- 4 When the restore is complete, click on Cancel from the window to return to the Backup Tool window.
Note: If the restore fails, check that a drive has been specified and the correct tape has been inserted.

Procedure 2-15

Restoring selected files

- 1 Click on View, and wait for the list of files to appear.
- 2 Select a file in the list.
- 3 Click on Restore selected files.
- 4 Click on Restore.
A message appears indicating that the restore was successful.
To select multiple consecutive files, select the first file, then hold the <Shift> key, and scroll to and click on the last file in the list.
All the files between (and including) the first and last file in the list are highlighted.
To select multiple files which are not consecutive, hold the <Ctrl> key while selecting files. All files selected will be highlighted.
- 5 Click on [Quit] to exit from the Backup Tool.

GUI-based Backup Tool error reporting

The Backup Tool includes an imbedded window which displays any errors related to an immediate backup or restore. These errors are also written to the `/u/ivr/backup/backup_default.bup.log` file. Any errors generated by scheduled backups are written only to the `/tmp/backup.log` file.

Note: Only errors generated by the “tar” system utility are reported.

Immediate backup errors

Whenever an attempt to perform an immediate backup fails (for example, due to bad/no tape, write protect on tape, or not enough room on the tape), the pop-up window shown in Figure 2-8 appears.

Figure 2-8
Backup failure message window



In this case, both the Backup Tool Error window and the `/u/ivr/backup/backup_default.bup.log` file display the following entry:

```
tar: cannot open:/dev/rct0
or if the write protect is on the tape inserted:
```

```
tar: cannot create /dev/rct0
tar: tape write error
```

Schedule/unschedule backup errors

The first time that a backup is scheduled from an account, the following messages appear in both the Backup Tool Errors window and the `/u/ivr/backup/backup_default.bup.log` file:

```
crontab: can't open your crontab file
warning: commands will be executed using /bin/sh
```

This message should be ignored, and the backup is scheduled as entered.

Whenever a backup is scheduled (or unscheduled), an entry is written into (or removed from) the account's crontab file.

Example of `/usr/spool/cron/crontabs/vad`:

```
26 18***cd/u/ivr/tools;
```

Whenever a scheduled backup is run and no tape is in the drive, a message similar to the following message appears in the `/u/ivr/backup/backup_default.bup.log` file and in the Backup Tool Error window:

```
[Wed Oct 25 18:24:00 EDT 1995] Start of backup session on  
device /dev/rct0.
```

```
tar: tape write error
```

```
[Wed Oct 25 18:24:00 EDT 1995] End of Backup session.
```

Whenever a scheduled backup is run and there is not enough room on the tape for a complete backup, a message similar to the following appears in the `/u/ivr/backup/backup_default.bup.log` file and in the Backup Tool Error window:

```
[Wed Oct 25 18:24:00 EDT 1995] Start of backup session on  
device /dev/rct0.
```

```
tar: tape write error
```

```
[Wed Oct 25 18:24:00 EDT 1995] End of Backup session.
```

Note: Errors generated through scheduled backups overwrite the lines at the start of the `/tmp/backup.log` file. We recommend that you clean up the `/u/ivr/backup/backup_default.bup.log` file prior to scheduling backups.

Restore/view errors

Whenever an error occurs (for example, due to no/bad tape) during an attempt to view files on a backup tape (Restore/View), no error pop-up window appears.

Both the Backup Tool Errors window and the `/u/ivr/backup/backup_default.bup.log` file contain the following entry:

```
tar: tape write error
```


Restore/restore errors

Whenever an error occurs (for example, due to no/bad tape) during an attempt to restore files from a tape (Restore/Restore), a pop-up window appears (see Figure 2-9).

Figure 2-9
Restore failure message window



Both the Backup Tool Errors window and the `/u/ivr/backup/backup_default.bup.log` file contain the following entry:

```
tar: tape write error
```